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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,053	12/19/2001	Michael Binnard	PAO-246	9790

7590

06/13/2003

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EXAMINER

MOHANDESI, IRAJ A

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 06/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/021,053

Applicant(s)

BINNARD ET AL.

Examiner

Iraj A Mohandesi

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 24-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-23 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0603.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1,2,4-13,15,16,18,19,22** are rejected under 35 U.S.C. 102(b) as being anticipated by **Hind US patent 5,648,690**.

Hind US'690 discloses a stage assembly comprising a first motor that includes a first part and a second part (column 2, line 50 –54), the first motor producing a first force; a second motor that includes a first part and a second part, the second motor producing a second force (column 4, line 33-43) a base (14, column 4, line e6, Fig. 1) to which the first part of the first motor is attached, a stage to which is attached the second part of the first motor and the second part of the second motor (see Fig. 1), the stage moving relative to the base (column 2, line 55) by at least one of the first force and the second force (see column 2, line 55) and a second stage to which the first part of the second motor is attached wherein the base and the second stage are different respective bodies (see Fig. 1, 2, 4) the first part of the first motor and the second part of the first motor interacts with each other to produce the first force and the first part of the second motor and the second part of the second motor interact with each other to produce the second force (column 4, line 11, 15), the base and the second stage are isolated from each other (15, 16 are isolated via an air bearing from each other, see column 4, line 29

and Fig. 11a) the base and the second stage is inherently connected to ground via a reaction frame (Fig. 7), at least one of the base and the stage base is a counter mass (15, Fig. 1, 2,) at least one magnet (21, column 3, line 6) member of the first motor and at least one coil (armature 19, column 5, line 31), member of the first motor and the second motor is planar, the direction of the first force is different from the direction of the second force Fig. 5 shows the element 11 and 13 in different directions), further comprising a levitation device (column 8, line 17 in Fig. 11a, 11b, 12, 13) that supports a part of weight of the stage, the second stage is movable along the same direction of the first force (see Fig. 1)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hind US'690** and in view of **Chitayat US patent 6,215,206**. **Hind US'690** discloses a stage assembly comprising a first motor that includes a first part and a second part (column 2, line 50 -54), the first motor producing a first force; a second motor that includes a first part and a second part, the second motor producing a second force (column 4, line 33-43) a base (14, column 4, line e6, Fig. 1) to which the first part of the first motor is attached, a stage to which is attached the second part of the first motor and the second part of the second motor (see Fig. 1), the stage moving

relative to the base (column 2,line 55) by at least one of the first force and the second force (see column 2,line 55) and a second stage to which the first part of the second motor is attached wherein the base and the second stage are different respective bodies (see Fig.1,2,4) the first part of the first motor and the second part of the first motor interacts with each other to produce the first force and the first part of the second motor and the second part of the second motor interact with each other to produce the second force (column 4,line 11,15), the base and the second stage are isolated from each other (15,16 are isolated via an air bearing from each other, see column 4,line 29 and Fig. 11a) the base and the second stage is inherently connected to ground via a reaction frame (Fig. 7), at least one of the base and the stage base is a counter mass (15 ,Fig.1,2,) at least one magnet (21, column 3,line 6) member of the first motor and at least one coil (armature 19 ,column 5,line 31), member of the first motor and the second motor is planar ,the direction of the first force is different from the direction of the second force Fig. 5 shows the element 11 and 13 in different directions), further comprising a levitation device (column 8,line 17 in Fig. 11a,11b, 12,13) that supports a part of weight of the stage, the second stage is movable along the same direction of the first force (see Fig.1).

However fails to teach a pair of the motors and produces torque about the Z axis that is perpendicular to a guide surface of the base.

Chitayat'206 teach a linear actuator having motor to produce torque about the Z axis that is perpendicular to a guide surface of the base (see abstract line 15)
For the purpose of elevating the stage from base.

Therefor it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine **Hind US'690** linear motor with a motor to produce torque about Z axis as taught by **Chitayat'206** for the purpose of elevating the stage from base perpendicularly.

With respect to **claims 17 and 23**, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the movable stage with six degree freedom between the first and second motor, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

5. **Claim 3** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Iraj A Mohandesi whose telephone number is (703)305-3242. The examiner can normally be reached on M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-0377.

IM
June 6, 2003


A handwritten signature in black ink, appearing to be "J. M. [unclear]", is written over a faint, illegible stamp. The stamp contains some text, including what looks like "JUN 6 2003" and "RECEIVED", but it is too faded to read accurately.